INCREASED BRAIN ATROPHY IN HOMELESS AND PRECARIOUSLY HOUSED INDIVIDUALS COMPARED TO THE GENERAL POPULATION

Research Objectives:
(1) To evaluate how brain atrophy in homeless and precariously housed individuals compares to the general population. (2) To evaluate whether traumatic brain injury or substance dependence were associated with greater brain atrophy. (3) To evaluate how greater brain atrophy is associated with functioning.

Methods:
Neuroimaging data from the general population was acquired from the open-access Cambridge Centre for Ageing and Neuroscience database. All other data was obtained as part of “The Hotel Study”, a longitudinal observational study of individuals who are homeless or precariously housed in an impoverished neighbourhood in Vancouver, BC. All T1-weighted MRI images were processed using FreeSurfer version 6.0. Tissue-to-intracranial volume ratio was used as the MRI measure of brain atrophy. We used multiple linear regression to evaluate predictors of brain atrophy as well as associations between baseline atrophy and baseline functioning.

Results:
Preliminary analyses indicate that homeless and precariously housed individuals have more rapid brain atrophy than individuals in the general population ($p < 0.0001$). Among homeless and precariously housed individuals, alcohol dependence ($p = 0.027$) and evidence of traumatic brain injury ($p = 0.00076$) were associated with greater atrophy, adjusting for age and sex. Greater atrophy was associated with poorer cognitive functioning test scores ($p = 0.015$) and lower scores on a measure of independent living ($p = 0.043$).

Conclusions:
There may be greater brain atrophy in homeless and precariously housed individuals compared to the general population. Greater atrophy is associated with poorer functioning, and traumatic brain injury and alcohol dependence may be important contributors to brain health in this population.